UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

July 8, 2014

Lauren McGee Rayburn, Environmental Scientist
U.S. Department of Agriculture RD, Rural Utilities Service
84 Coxe Avenue, Suite 1E
Asheville, NC 28801

RE: McClellanville 115 kV Transmission Project, Draft Environmental Impact Statement (DEIS)
CEQ Number:

Dear Ms. Rayburn:

Pursuant to Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency (EPA) has reviewed the subject McClellanville 115 kV Transmission Project, Draft Environmental Impact Statement (DEIS). The U.S. Department of Agriculture RD, Rural Utilities Service is the lead federal agency for the proposed action.

Central Electric proposes to construct, operate, and maintain a new 115 kV electrical transmission line that would bring service to the proposed McClellanville Substation and would serve Berkeley Electric's members in the McClellanville area. The new transmission line would originate at one of two potential locations near the Winyah Generation Station. The first location is at the Belle Isle Substation on U.S. Highway 17 and the second possible location is a tap point along the existing Winyah-Belle Isle 115 kV transmission line. The transmission line would terminate at the proposed McClellanville Substation, located in McClellanville, South Carolina. Approximately 15 to 20 miles of new 115 kV transmission line would need to be constructed along with a new 115 kV substation. The overall Project Area identified encompasses parts of Georgetown and Charleston counties in South Carolina.

PLAN ALTERNATIVES

No-Action Alternative

Under the no-action alternative, the McClellanville Transmission Line would not be constructed. The existing environment within the Project Area would remain the same, and no land would be used for transmission lines, facilities, or a substation. The customers of Berkeley

Electric in the McClellanville area would continue to have reliability issues and outages. In addition, future growth will add additional constraint to a strained electrical system.

Proposed Action

The proposed action considers six possible route locations. These route locations were selected for further analysis because they reduce impacts to residences, sensitive habitats, conservation lands, and cultural and historic resources. Existing ROWs (roads and transmission lines) were used in in designing the proposal as much as possible. The preferred route will be selected prior to the final EIS.

Alternative Route A

Alternative Route A originates at the Belle Isle Substation. For the first 3 miles of the alignment, Alternative Route A parallels U.S. Highway 17 on the north side. The route then crosses the highway and parallels on the south side for another 3.5 miles, crossing the North Santee River. After the river crossing, the route crosses to the north side of U.S. Highway 17 to avoid an archaeological site located on the south side of the highway. The route maintains the parallel alignment on the north side of U.S. Highway 17 for another 6 miles. Alternative Route A then angles to the southeast for approximately 0.75 mile before angling back to the southwest for 1.5 miles to avoid residences located on the east side of U.S. Highway 17. Alternative Route A then turns west, crosses U.S. Highway 17, and terminates in the McClellanville Substation. Alternative Route A is 16.1 miles long.

Alternative Route B

Alternative Route B follows the same alignment as Alternative Route A out of the Belle Isle Substation for the first 3 miles. After 3 miles, the route angles to the southwest for approximately 0.5 mile before turning south. After approximately 1.5 miles, the route angles to the southwest to a narrow crossing of the North Santee River. Alternative Route B continues this alignment for approximately 2.5 miles, crossing the South Santee River. At this point, the route turns southeast until it reaches U.S. Highway 17. Alternative Route B then follows the same alignment as Alternative Route A into the substation. Alternative Route B is 16.3 miles long.

Alternative Route C

Alternative Route C follows the same alignment as Alternative Route B up to the point where Alternative Route B turns back to U.S. Highway 17. At this point, Alternative Route C continues in a southwest–south direction for approximately 6 miles to the McClellanville Substation. Alternative Route C does not parallel any existing infrastructure for these 6 miles and angles between two parcels of land owned by FMNF. Alternative Route C is 15.6 miles long.

Alternative Route D

Alternative Route D follows the same alignment as Alternative Route A for the first 11 miles. Approximately 4 miles north of McClellanville, Alternative Route D angles to the southwest along the boundary of the FMNF before turning south to follow the same alignment as Alternative Route C to the McClellanville Substation. Alternative Route D is 16.1 miles long.

Alternative Route E

Alternative Route E begins at the tap location on the Winyah-Belle Isle 115 kV transmission line and angles north along the south side of East CCC Road to meet the Winyah–Charity 230 kV transmission line. From this point, Alternative E parallels the existing transmission line and an existing gas line on the south side for approximately 4 miles. Alternative Route E then turns south to cross the North Santee River. The route then angles to the southeast for 2.5 miles before turning south to cross the South Santee River. Alternative Route E proceeds south for approximately 6.4 miles across forested areas before following the same alignment as Alternative Route D into the substation. Alternative Route E is 19.9 miles long.

Alternative Route F

Alternative Route F follows the same alignment as Alternative Route E for the first 11 miles. After crossing the South Santee River, Alternative Route F continues south for approximately 6 miles. The route then follows the same alignment as Alternative Route C into the McClellanville Substation. Alternative Route F is 19.1 miles long.

Preferred Route

The preferred route will be selected prior to the final EIS.

EPA COMMENTS and RECOMMENDATIONS

The impact from the construction of a transmission line can be measured in several different ways. Useful measurements of impacts may be area (acreage), distance (miles or feet), or the number of transmission structures. The effect of a new transmission line on an area may depend on the topography, land cover, and existing land uses. In forested areas the entire right-of-way (ROW) width is cleared and maintained free of tall-growing trees for the life of the transmission line. The result is a permanent change to the ROW land cover. In general the degree of impact of a proposed transmission line is determined by the quality or uniqueness of the existing environment along the proposed route.

The quality of the existing environment is influenced by several factors:

The degree of disturbance that already exists

The significance of prior disturbance can be evaluated by determining how close the place resembles pre-settlement conditions. Many areas have been substantially altered by logging, the installation of drain tiles, residential and commercial developments, or conversion to cropland.

The uniqueness of the resources

Proposed transmission routes are reviewed for species or community types that are uncommon or in decline in the region or state. The environmental review evaluates whether the resource possesses a feature that would make it unique, such as its size, species diversity, or whether the resource plays a special role in the surrounding landscape.

The threat of future disturbance

The resource is compared to surrounding land uses which may affect the quality of the resource over time. Whether the current and likely future land uses may threaten some aspect of the resource. Whether the resource is valued by the adjacent community and therefore, likely to be preserved. The construction of a transmission line involves both long-term and temporary impacts. Long-term impacts can exist as long as the line is in place and include land use restrictions and aesthetic impacts. Temporary impacts occur during construction or at infrequent intervals such as during line repair or ROW maintenance. Temporary impacts during construction can include noise and crop damage. Short-term impacts can become long-term impacts if not properly managed or mitigated.

Types of Impacts Associated with Transmission Lines and possible Mitigation

Aesthetics
Potential Aesthetic Impacts

The overall aesthetic effect of a transmission line is likely to be negative to most people, especially where proposed lines would cross natural landscapes and private properties. The tall steel or wide H-frame structures may seem out of proportion and not compatible with agricultural landscapes or residential neighborhoods. Landowners who have chosen to bury their electric distribution lines on their property may find transmission lines bordering their property particularly disruptive to scenic views.

Mitigation of Aesthetic Impacts

Electric transmission lines may be routed to avoid areas considered scenic. Routes can be chosen that pass through commercial/industrial areas or along land use boundaries. The form, color, or texture of a line can be modified to somewhat minimize aesthetic impacts. There are some choices available in transmission structure color and/or construction material. Structures constructed of wood or of rust brown oxidized steel may blend better with wooded landscapes. Stronger conductors can minimize line sag and provide a sleeker profile. ROW management can also mitigate visual impacts of transmission lines. Some of these techniques include planting vegetative screens to block views of the line, leaving the ROW in a natural state at road crossings, and placing or piling brush from the cleared ROW so that it provides wildlife habitat. In the end, aesthetics are to great extent based on individual perceptions. Siting, design construction materials, and ROW management can mitigate some of the adverse aesthetic effects of a line. It is in the interest of the applicant and the affected landowners to discuss these measures early in the planning and design process.

Electric and Magnetic Fields (EMF)
Potential Impacts of EMF

Health concerns over exposure to EMF are often raised when a new transmission line is proposed. Exposure to electric and magnetic fields caused by transmission lines has been studied since the late 1970s. These fields occur whenever electricity is used. A magnetic field is created when electric current flows through any device including the electric wiring in a home. Every day we are exposed to many sources of EMF from vacuum cleaners, microwaves, computers, and fluorescent lights. The research to date has uncovered only weak and inconsistent associations between exposures and human health. To date the research has not been able to establish a cause and effect relationship between exposure to magnetic fields and human disease, nor a plausible biological mechanism by which exposure to EMF could cause disease. The magnetic fields produced by electricity do not have the energy necessary to break chemical bonds and cause DNA mutations.

Reducing EMF Levels of Transmission Lines

Magnetic fields can be measured with a gauss meter. The magnitude of the magnetic field is related to current flow, not line voltage. A 69 kV line can have a higher magnetic field than a 345 kV line. Magnetic fields quickly dissipate with distance from the transmission line. A common method to reduce EMF is to bring the lines closer together. This causes the fields created by each of the three conductors to interfere with each other and produce a reduced total magnetic field. Magnetic fields generated by double-circuit lines are less than those generated by single-circuit lines because the magnetic fields interact and produce a lower total magnetic field. In addition, double circuit poles are often taller resulting in less of a magnetic field at ground level.

Endangered/Threatened and Protected Species
Potential Impacts to Protected Species

Endangered species are species whose continued existence is in jeopardy. Threatened species are likely to become endangered. Species of special concern have some problems related to their abundance or distribution, although more study is required. Construction and maintenance of transmission lines might destroy individual plants and animals or might alter their habitat so that it becomes unsuitable for them. For example, trees used by rare birds for nesting might be cut down or soil erosion may degrade rivers and wetlands that provide required habitat.

Construction of the east-west component of Alternative 1 would result in a permanent 140-foot wide ROW through the ANF. Although this entire ROW was previously cleared by construction of the FGT gas pipeline, Alternative 1 would convert a 60-foot wide portion of this ROW from temporary workspace, which would have been allowed to revert to native forests, to permanently cleared, non-forested operational work space. Because of this, construction of Alternative 1 may result in cumulative impacts by creating a barrier that could potentially block the migratory movements of protected or Forest Service sensitive amphibians such as striped newts and Florida gopher frogs between their upland habitat and their ephemeral breeding ponds. No other measurable cumulative impacts on threatened, endangered, or Forest Service sensitive species are anticipated from construction of Alternative 1

Mitigation of Impacts to Protected Species

If preliminary research and field assessments indicate that rare species or natural communities may be present in the project area, the utility should conduct US Fish and Wildlife Service (USFWS)-approved surveys prior to construction. If a state-listed species is likely to be in the project area, impacts can usually be avoided or minimized by redesigning or relocating the transmission line, special construction techniques, or limiting the time of construction to specific seasons. In some limited cases, transmission line ROWs can be managed to provide habitat for endangered/threatened resources. An example includes osprey nesting platforms built on top of transmission poles. Close cooperation between the transmission provider, ROW maintenance staff, and the USFWS is needed to develop an effective management plan.

Invasive Species
Potential Impacts by Invasive Species

Non-native plants, animals, and microorganisms found outside of their natural range can become invasive. The majority of non-native species are harmless because they do not reproduce or spread abundantly in their new surroundings. Some non-native species have been introduced intentionally, however, a small percentage of non-native species are able to become quickly established, are highly tolerant of a wide range of conditions, and are easily dispersed. The diseases, predators, and parasites that kept their populations in check in their native range may not be present in their new locations. Over time, non-native, invasive species can overwhelm and eliminate native species, reducing biodiversity and negatively affecting both ecological communities and wildlife habitats. Human actions are the primary means of invasive species introductions. Transmission line construction causes disturbance of ROW soils and vegetation through the movement of people and vehicles along the ROW, access roads, and laydown areas. These activities can contribute to the spread of invasive species. Parts of plants, seeds, and root stocks can contaminate construction equipment and essentially "seed" invasive species wherever the vehicle travels. Invasive species' infestations can also occur during periodic transmission ROW maintenance activities especially if these activities include mowing and clearing of vegetation. Once introduced, invasive species will likely spread and impact adjacent properties with the appropriate habitat.

Best Management Practices

To establish preventive measures to help minimize their spread Best Management Practices (BMP) will assist utilities in complying with "reasonable precaution" requirements. BMPs identifies many methods that can be used to limit the introduction and spread of invasives species during and post-construction. These measures include marking and avoidance of invasives, timing construction activities during periods that would minimize their spread, proper cleaning of equipment, and proper disposal of woody material removed from the ROW. Because construction measures may not be completely effective in controlling the introduction and spread of invasives, post-construction activities are required. Sensitive areas such as wetlands and high quality forests should be surveyed for invasive species following restoration of the construction site. If new infestations are discovered, then measures should be taken to control the infestation. Each exotic or invasive species requires its own protocol for control or elimination. Techniques to control exotic/invasive species include the use of pesticides, biological agents, hand pulling, controlled burning, and cutting or mowing.

Water Resources

Potential Impacts to Surface Waters

Surface waters in the form of creeks, streams, rivers, and lakes are abundant throughout Florida. Many of these waters have been designated as special resources that have state, regional, or national significance. Construction and operation of a transmission line across these resources may have both short-term and long-term effects. Water quality can be impacted not only by work within a lake or river but also by nearby clearing and construction activities. The removal of adjacent vegetation can negatively affect aquatic habitats. It can also increase erosion of adjacent soils causing sediment to be deposited into the waterbody, especially during rain events. Construction often requires the building of temporary bridges across small channels, which if improperly installed may damage banks and cause erosion. Overhead transmission lines across major rivers, streams, or lakes may have a visual impact on the users and pose a potential collision hazard for waterfowl and other large birds, especially when located in a migratory corridor.

Mitigation of Impacts to Surface Waters

Techniques for minimizing adverse effects of constructing transmission lines in river and stream environments include avoiding impacts, minimizing impacts, and/or effective remediation of the impacts. Impacts to surface waters can be avoided by rerouting the line away from the waterbody, adjusting pole placements to span the resource overhead, boring the line under the resource, or constructing temporary bridge structures across the resource. Methods to minimize impacts include avoiding pole placements adjacent to the resource, erosion control methods, using alternative construction methods such as helicopter construction, landscaping to screen the poles from the view of river users, and maintaining shaded stream cover. After construction, some impacts can be remediated. There are several methods and cable types for constructing a transmission line under a resource. Lower voltage and distribution lines are commonly directionally bored under the waterway. High voltage lines are rarely constructed underground due to the substantial engineering, costs, and operational hurdles that would need to be overcome for it to be a feasible alternative to overhead construction. Constructing a line underground will minimize construction and esthetic impacts to the resource. However, it does require potentially large construction entrance and exit pits on either side of the resource. There are also concerns about the potential for frac-outs which can release drilling fluids into the waterbody and subsurface environment.

Proper erosion control is necessary for all construction activities, especially those that may affect water resources. BMPs should be employed before, during, and immediately after construction of the project to reduce the risk of excess siltation into streams. Erosion controls must be regularly inspected and maintained throughout the construction phase of a project until exposed soil has been stabilized. Woodlands and shrub/scrub areas along streams are a valuable buffer between adjacent farm fields and corridors of natural habitats. The vegetation maintains soil moisture levels in stream banks, helps stabilize the banks, and encourages a diversity of vegetation and wildlife habitats. Existing vegetative buffers should be left undisturbed or minimally disturbed, whenever possible. For areas where construction impacts cannot be avoided, low-growing native tree and shrub buffers along these streams should be allowed to regrow and/or should be replanted so as to maintain the preconstruction water quality in the streams.

Wetlands

Potential Impacts to Wetlands

Wetlands occur in many different forms and serve vital functions including storing runoff, regenerating groundwater, filtering sediments and pollutants, and providing habitat for aquatic species and wildlife. The construction and maintenance of transmission lines can damage wetlands in the following ways:

Heavy machinery can crush wetland vegetation and wetland soils.

Wetland soils, especially very peaty soils can be easily compacted, increasing runoff, blocking flows, and greatly reducing the wetland's water holding capacity.

The construction of access roads can change the quantity or direction of water flow, causing permanent damage to wetland soils and vegetation.

Construction and maintenance equipment that crosses wetlands can stir up sediments, endangering fish and other aquatic life.

Clearing forested wetlands can expose the wetland to invasive and shrubby plants, thus removing habitat for species in the forest interior.

Vehicles and construction equipment can introduce exotic plant species. With few natural controls, these species may out-compete high-quality native vegetation, destroying valuable wildlife habitat.

Any of these activities can impair or limit wetland functions. Organic soils consist of layers of decomposed plant material that formed very slowly. Disturbed wetland soils are not easily repaired.

The ingress and egress of personal vehicles and construction equipment on the travel lane ROW during construction and post-construction maintenance activities could disturb or remove existing or restored herbaceous wetland vegetation cover, potentially resulting in erosion and sedimentation of wetlands. Additionally fuel or petroleum spills from refueling operations or construction equipment maintenance activities conducted near or in wetlands either during construction or post-construction maintenance could potentially result in contamination of wetlands.

Mitigation of Impacts to Wetlands

To minimize the potential impacts to wetlands, the utility can:

Avoid placing transmission lines through wetlands.

Adjust pole placements to span wetlands or limit the number of poles located in wetlands, wherever possible.

Use mats and wide-track vehicles to spread the distribution of equipment weight when crossing wetlands during the growing season.

Use alternative construction equipment such as helicopters or marsh buggies for construction within wetlands.

Clean construction equipment after working in areas infested by purple loosestrife or other known invasive, exotic species.

When the Preferred Route is selected please contact Kelly Laycock of EPA's Region 4, Wetlands, Coastal & Oceans Branch at (404) 562-9132 laycock.kelly@epa.gov for all 404 issues and comments.

Forests

Potential Impacts to Forests

Forests provide recreational opportunities, wildlife and plant habitats, and timber. Building a transmission line through woodlands requires that all trees and brush be cleared from the ROW. One mile of 100-foot ROW through a forest results in the loss of approximately 12 acres of trees. Transmission construction impacts can include forest fragmentation and the loss and degradation of wooded habitat, aesthetic enjoyment of the resource, and/or the loss of income. Different machines and techniques are used to remove trees from the transmission ROW depending on whether woodlands consist of mature trees, have large quantities of understory trees, or are in sensitive environments such as a wooded wetland. These can range from large whole tree processors which can cause rutting and compaction of the forest floor to hand clearing with chainsaws in more sensitive environments. Smaller diameter limbs and branches are often chipped or burned. According to the landowner's wishes, wood chips may be spread on the ROW, piled to allow transport by the landowner to specific locations, or chipped directly into a truck and hauled off the ROW.

Forest Fragmentation

A transmission line ROW can fragment a larger forest block into smaller tracts. The continued fragmentation of a forest can cause a permanent reduction in species diversity and suitable habitat.

In general, forest fragmentation has a negative impact on the existing quality of wildlife habitat by creating potential barriers to movement for some species and potentially increasing predation rates. In particular, fragmentation potentially can effect local populations of salamanders, toads, and frogs. Many of these amphibian species require forested migratory access to breeding ponds to maintain viable populations. The conversion of forested habitat to maintained (i.e., non-forested) linear utility lines could be a barrier to amphibian populations reaching their historic breeding ponds. For example, a population of salamanders occupying upland habitat on the north side of a proposed utility line ROW may be cut off from their breeding ponds on the south side of the ROW after utility line construction has been completed. This potential impact is dependent upon the width of the non-forested portion of the newly constructed ROW and the species of amphibians that live along the proposed ROW; that is, different species of amphibians have different tolerances as to the width of non-forested habitat that they will cross to reach their historic breeding ponds.

Environmental Justice (EJ)

EPA recommends that an EJ evaluation be conducted for all communities within a reasonable radius of the study area. The EJ study should include more than just demographics and should include interviews with the potentially affected communities.

EPA CONCERNS

All proposed alternatives cross the sensitive Santee Delta area. The Santee Delta is a unique coastal feature supporting thousands of resident and migratory birds, wildlife, and fisheries, including many rare or endangered species. Thousands of acres of wetlands, including managed wetlands, are cooperatively controlled by state and federal agencies and private landowners. The DEIS does not contain sufficient information on the following Santee Delta area issues:

Managed wetlands (impoundments) and supported aquatic birds, shorebirds, and raptors such as Wood Duck, Mallard, Black Duck, Least Tern, Black Skimmer, Red Knot, Osprey, Bald Eagle, Swallow-Tailed and Mississippi Kites, Wood Stork, Ibis, Herons, etc.

The importance of Santee Delta forested habitats along proposed alignments to migratory songbirds, wading birds, and particularly Wood Storks. Information on specific impacts of a transmission line in this vicinity including bird collisions and fragmentation and nest parasitism as a result of opening or widening a long cleared corridor is also lacking.

Potential impacts to long-leaf pine restoration and enhancement work being done in the area by a number of entities including the Forest Service and the Seewee Longleaf Conservation Cooperative supported by grants from the National Fish and Wildlife Foundation. Several sites appear to align with proposed DEIS alternative corridors.

Impacts to highest-priority SC Conservation Species present in the Santee Delta or adjacent uplands including Bachman's Sparrow, Brown-headed Nuthatch, Glossy Ibis, Kentucky

Warbler, Least Bittern, Mallard, Rusty Blackbird, Swallow-tailed Kite, Tricolored Heron and Wood Stork. Also present are American Woodcock, Mottled Duck, and Wood Duck.

Endangered species critical habitat presence and impacts of alternatives on these. For example, several endangered Red Cockaded Woodpecker Safe Harbor designated areas within the potential alternative corridors should be addressed.

A true cumulative impact analysis on biological resources that selects key or indicator species and focuses on past, current and potential future impacts including the impacts from project alternatives on these species and their habitats.

We rate this document EC-2 Environmental Concerns. We have concerns that the proposed action identifies the potential for impacts to the environment that should be further avoided/minimized. The draft EIS does not contain sufficient information to fully assess environmental impacts that should be avoided in order to fully protect the environment, which could reduce the environmental impacts of the proposal. The identified additional information, data, analyses, or discussion should be included in the final EIS (FEIS).

Based on the DEIS, all alternative routes cross the sensitive Santee Delta area. For each resource in the Santee Delta area, all mitigation measures to reduce or avoid impacts should be identified and implemented as well as those impacts that are unavoidable even after implementation of mitigation. Additional mitigation measures should be evaluated as further information becomes available on the actual route location. All mitigation measures combined with additional Best Management Practices, would appear to be the best approach.

We appreciate the opportunity to review the proposed action. Please contact Ken Clark at (404) 562-8282, clark.ken@epa.gov if you have any questions or want to discuss our comments.

Sincerely,

Heinz J. Mueller, Chief
NEPA Program Office
EPA, Region 4